

【CLAIMS】

【Claim 1】 A adapter for branching a hose, insertedly connected to an edge of the hose, to distribute fluid flowing through the hose, comprising:

- 5 a body for conveying the fluid, the body including an inlet and outlet at its one end and other, respectively;
- a head formed at a predetermined position of the inlet side of the body, the head being formed as a cone being tapered one end to the other; and
- a coupling unit including a first coupling unit at the inlet side of the body and
10 a second coupling unit at the outlet side of the body.

【Claim 2】 The adapter according to claim 1, wherein the head includes a screw groove formed at a predetermined size on its outer surface sloping at a predetermined angle.

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【Claim 3】 The adapter according to claim 1, wherein the head includes a screw thread outwardly protrudently formed on its outer surface sloping at a predetermined angle.

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【Claim 4】 The adapter according to one of claims 1 to 3, wherein the head and the body are coupled to each other such that forms female screws formed on inner surface of the head are coupled to male screws formed at the inlet side of the body or female screws formed on one side of the outer surface of the head are coupled to male screws formed on the inner surface of the inlet side of the body.

【Claim 5】 The adapter according to one of claims 1 to 3, further comprising a locking step unit outwardly protrudently formed such that the head coupled to the outer edge at the end of the inlet side of the body cannot be separated therefrom.

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【Claim 6】 The adapter according to claim 5, wherein the outer edge at the end of the inlet side of the body includes an extension groove which is formed by cutting lengthwise, and extensible, in which more than one extension grooves are formed by cutting along its periphery direction.

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【Claim 7】 The adapter according to claim 6, wherein the head includes an extension plate at a predetermined position in the inner surface thereof, the number of the extension plate being formed to be equal to that of the extension groove, in which the extension plate is insertedly coupled to the extension groove.

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【Claim 8】 The adapter according to claim 7, wherein the extension plate is gradually decreased in size from one end to the other.

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【Claim 9】 The adapter according to claim 6, further comprising a cylinder shaped head cap whose diameter is gradually decreased from one end to the other, in which the head cap includes a fixing step outwardly protrudently formed at one end of the outer surface thereof and is insertedly connected to the end of the inlet of the body, in which the extension groove is formed.

【Claim 10】 The adapter according to one of claims 1 to 3, wherein the head includes a plate shaped packing at one side of the head.

【Claim 11】 The adapter according to one of claims 1 to 3, wherein one end of the
5 head is formed to be wedged at a predetermined angle.

【Claim 12】 The adapter according to claim 11, wherein the head and the body are
coupled to each other such that forms female screws formed on inner surface of the
head are coupled to male screws formed at the inlet side of the body or female screws
10 formed on one side of the outer surface of the head are coupled to male screws formed
on the inner surface of the inlet side of the body.

【Claim 13】 The adapter according to claim 11, wherein the head includes a screw
groove formed at a predetermined size on its outer surface, sloping at a predetermined
15 angle.

【Claim 14】 The adapter according to claim 11, wherein the head includes a screw
thread outwardly protrudently formed on its outer surface, sloping at a predetermined
angle.

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【Claim 15】 The adapter according to claim 11, further comprising a locking step
unit outwardly protrudently formed such that the head coupled to the outer edge at the
end of the inlet side of the body cannot be separated therefrom.

【Claim 16】 The adapter according to claim 11, wherein the outer edge at the end of the inlet side of the body includes an extension groove which is formed by cutting lengthwise, and extensible, in which plural extension grooves are formed by cutting along its periphery direction.

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【Claim 17】 The adapter according to claim 16, wherein the head includes an extension plate at a predetermined position in the inner surface thereof, the number of the extension plate being formed to be equal to that of the extension groove, in which the extension plate is insertedly coupled to the extension groove.

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【Claim 18】 The adapter according to claim 17, wherein the extension plate is gradually decreased in size from one end to the other.

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【Claim 19】 The adapter according to claim 11, wherein the head includes a packing shaped as a plate at one side of the head.

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【Claim 20】 A adapter for branching a hose, comprising:

a body including a passage through which fluid passes, an inlet formed at one end thereof to be inserted into a hose, and an outlet formed at the other end thereof to be connected to the adapter, the outlet being protruently installed to the hose;

a head formed at the inlet side of the body, the head being insertedly connected to a hole of the hose; and

a coupling unit including a coupling member, in which the coupling member is arranged adjacent to the inlet and coupled to a coupled member such as an inserting

groove or screwing unit formed at an outer surface of the body;

wherein the head includes an inserting unit formed irregularly on an upper surface thereof and a pressing unit formed on a lower surface thereof, in which the inserting unit has a width smaller than that of the pressing unit and the pressing unit

5 has a diameter greater than that of the hole of the hose.

【Claim 21】 The adapter according to claim 20, wherein the inserting unit includes a screw unit shaped as a cone, in which one part of the screw unit is inwardly cut, the shortest distance between the cut part and the lower surface of the head is smaller than

10 the diameter of the hole of the hose.

【Claim 22】 The adapter according to claim 21, wherein the head includes a protrusion unit at a boundary surface between the inserting unit and the pressing unit, in which the protrusion unit is partially protruded from the inserting unit to the outside 15 thereof, and a step formed between the pressing unit and the protrusion unit.

【Claim 23】 The adapter according to claim 20, wherein the inserting unit includes a cone shaped screw unit, in which one part of the screw unit is cut.

20 **【Claim 24】** The adapter according to claim 23, wherein the head includes a protrusion unit at a boundary surface between the inserting unit and the pressing unit, in which the protrusion unit is partially protruded from the inserting unit to the outside thereof, and a step is formed between the pressing unit and the protrusion unit.

【Claim 25】 The adapter according to claim 20, wherein the inserting unit includes a screw unit shaped as a cylinder, in which one part of the screw unit is cut.

5 【Claim 26】 The adapter according to claim 25, wherein the head includes a protrusion unit at a boundary surface between the inserting unit and the pressing unit, in which the protrusion unit is partially protruded from the inserting unit to the outside thereof, and a step is formed between the pressing unit and the protrusion unit.

10 【Claim 27】 The adapter according to claim 20, wherein the head is shaped as a cone whose vertex is eccentric.

15 【Claim 28】 The adapter according to claim 27, wherein the head includes a protrusion unit at a boundary surface between the inserting unit and the pressing unit, in which the protrusion unit is partially protruded from the inserting unit to the outside thereof, and a step formed between the pressing unit and the protrusion unit.

【Claim 29】 The adapter according to claim 20, wherein the inserting unit is shaped as a protrusion tip partially protruded to outer radius of the pressing unit.

20 【Claim 30】 The adapter according to one of claims 20 to 29, wherein the coupling member includes a taper unit on the upper side thereof, in which the taper unit includes a flat surface in the inside thereof and forms a diameter on the upper side thereof, which is larger than that of the pressing of the head.

【Claim 31】 The adapter according to claim 30, further comprising a sealing protrusion unit circularly extended and protruded at one surface of the flat surface of the coupling member and the pressing unit of the head.

5 **【Claim 32】** The adapter according to claim 31, further comprising a sealing groove opposite to a part to which the sealing protrusion unit is installed.

【Claim 33】 A adapter for branching a hose, comprising:

a body including a passage through which fluid passes in the inside thereof, an
10 inlet formed at one end thereof to be inserted into a hose, and an outlet formed at the other end thereof to be connected to the adapter, the outlet being protruently installed to the hose;

a head formed at the inlet side of the body, the head being insertedly connected to a hole of the hose and including a packing member installed to the lower
15 surface thereof;

a locking step unit for fixing the packing member, the locking step unit being protruded to the outer radius at the lower position of the body; and

a coupling unit including first and second coupling members, in which the first and second coupling members are adjacently arranged to the inlet and the outlet,
20 respectively, and coupled to a screw unit formed at an outer surface of the body;

wherein the head includes an inserting unit irregularly formed on an upper surface thereof and a pressing unit formed on a lower surface thereof, in which the inserting unit has a width smaller than that of the pressing unit and the pressing unit has a diameter greater than that of the hole of the hose.

【Claim 34】 The adapter according to claim 33, wherein the inserting unit includes a screw unit shaped as a cone, in which one part of the screw unit is inwardly cut, the shortest distance between the cut part and the lower surface of the head is smaller than
5 the diameter of the hole of the hose.

【Claim 35】 The adapter according to claim 34, wherein the head includes a protrusion unit at a boundary surface between the inserting unit and the pressing unit, in which the protrusion unit is partially protruded from the inserting unit to the outside
10 thereof, and a step formed between the pressing unit and the protrusion unit.

【Claim 36】 The adapter according to claim 33, wherein the inserting unit includes a screw unit shaped as a cone, in which one part of the screw unit is cut.

15 【Claim 37】 The adapter according to claim 36, wherein the head includes a protrusion unit at a boundary surface between the inserting unit and the pressing unit, in which the protrusion unit is partially protruded from the inserting unit to the outside thereof, and a step is formed between the pressing unit and the protrusion unit.

20 【Claim 38】 The adapter according to claim 33, wherein the inserting unit includes a screw unit shaped as a cylinder, in which one part of the screw unit is cut.

【Claim 39】 The adapter according to claim 38, wherein the head includes a protrusion unit at a boundary surface between the inserting unit and the pressing unit,

in which the protrusion unit is partially protruded from the inserting unit to the outside thereof, and a step is formed between the pressing unit and the protrusion unit.

5 【Claim 40】 The adapter according to claim 33, wherein the head is shaped as a cone whose vertex is eccentric.

10 【Claim 41】 The adapter according to claim 40, wherein the head includes a protrusion unit at a boundary surface between the inserting unit and the pressing unit, in which the protrusion unit is partially protruded from the inserting unit to the outside thereof, and a step is formed between the pressing unit and the protrusion unit.

【Claim 42】 The adapter according to claim 33, wherein the inserting unit is shaped as a protrusion tip partially protruded to outer radius of the pressing unit.

15 【Claim 43】 The adapter according to one of claims 33 to 42, wherein the coupling member including a taper unit on the upper side thereof, in which the taper unit includes a flat surface in the inside thereof and forms a diameter on the upper side thereof, which is larger than that of the pressing of the head.

20 【Claim 44】 The adapter according to claim 43, further comprising a sealing protrusion unit circularly extended and protruded at one surface of the flat surface of the coupling member and the pressing unit of the head.

【Claim 45】 The adapter according to claim 44, further comprising a sealing

groove opposite to a part to which the sealing protrusion unit is installed.

【Claim 46】 The adapter according to claim 20, further comprising a packing member made of rubber, etc., at the lower side of the pressing unit.

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【Claim 47】 The adapter according to claim 20 or 46, wherein the inserting unit of the head is shaped as a part of hemisphere, in which the inserting unit is formed such that three quarters with respect to the vertex of the hemisphere are cut off leaving a quarter of the inserting unit and an inlet hole close to the vertex, with respect to a top view, and cut off at a part of the inlet, with respect to a side view.

【Claim 48】 The adapter according to claim 47, wherein the shortest distance between the cut part and an edge part of the pressing unit of the head is smaller than the diameter of the hole of the hose.

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【Claim 49】 The adapter according to claim 48, wherein the coupling unit forms a slope surface at an inner circular surface of the upper side thereof, in which the slope surface increases in diameter from the center to the outer direction, such that the slope surface can apply pressure to an outer surface of the hose in the sloped direction.

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【Claim 50】 The adapter according to claim 48, wherein the coupling unit forms a flat surface applying a pressure to the pressing unit, at an inner circular surface of the upper side thereof, and a taper unit from an outer part of the flat surface from the end of the inner circular surface of the upper side thereof.

【Claim 51】 The adapter according to claim 50, wherein the flat surface has an outer diameter greater than the diameter of the pressing unit of the head.

5 **【Claim 52】** The adapter according to claim 47, wherein the pressing unit includes a guide groove at either left or right or both sides thereof such that the pressing unit is smoothly inserted thereinto when the adapter is rotated to be installed to the hose.

10 **【Claim 53】** The adapter according to any one of claims 48 to 51, wherein the pressing unit includes a guide groove at either left or right or both sides thereof such that the pressing unit is smoothly inserted thereinto when the adapter is rotated to be installed to the hose.